WHAT IS CLAIMED IS:

1. A wireless system for transmitting and receiving a plurality of data packets, the system comprising:

a plurality of directional antenna sectors each having a respective three-dimensional region for transmitting and receiving electromagnetic signals;

a plurality of access control units each having a baseband processor;

an antenna control unit;

wherein each said directional antenna sector transmits an electromagnetic signal in a predefined region in three-dimensional space when coupled to a selected one of the access control units with baseband processors;

wherein selected ones of the directional antenna sectors are coupled to at least one selected one of the access control units for receiving data packets and for measuring at least one received electromagnetic signal characteristics;

wherein selected ones of the at least one said received electromagnetic signal characteristics are transferred to the antenna control unit; and

wherein the antenna control unit selects at least one of the access control units within a first predefined time interval prior to the transmission of at least one data packet responsive to the received electromagnetic signal characteristics.

2. The system as in Claim 1, wherein the access control unit is part of at least one of: an 802.11 wireless network adapter, an 802.15 wireless network adapter, an 802.16 wireless network adapter, a 3G cellular phone, a 4G cellular phone, a mobile device, a laptop computer, a personal computer, a personal digital assistant, a cellular phone, a 2.5G cellular phone, a 3G device, a 4G device, a 5G device, a multimedia device, a base station, a wireless access point, an access router, and a packet switch line card.

3. The system as in Claim 1, wherein the antenna control unit selects one of the plurality of access control units for transmitting at least one data packet.

4. The system as in Claim 1, wherein each of the plurality of access control units is coupled to at least one respective one of the directional antenna sectors.

5. The system as in Claim 4, wherein each of the plurality of access control units is coupled to a USB (universal serial bus) hub.

6. The system as in Claim 5, wherein the USB hub is coupled to the antenna control unit.

7. The system as in Claim 1, wherein each of the plurality of access control units utilizes an 802.11-based device coupled to a USB hub, and

wherein the USB hub is coupled to the respective plurality of directional antenna sectors.

8. A wireless system for transmitting and receiving a plurality of data packets via at least one of a plurality of wireless channels, the system comprising:

a first device comprising at least one receiving controller;

at least one transmitting controller; and

a plurality of directional antenna sectors each having a respective three-dimensional region for transmitting and receiving electromagnetic signals;

wherein each of the directional antenna sectors transmits electromagnetic signals in a predefined region responsive to coupling to a selected one of said at least one transmitting controller of the first device;

wherein the selected one of said at least one transmitting controller of the first device is selectively coupled to at least one of the directional antenna sectors in order to transmit a first signal to a second device via a selected one of the wireless channels;

wherein the second device measures electromagnetic characteristics of the first signal and responsive thereto sends information back to the first device;

wherein, prior to the transmission of at least one data packet, a selected one of the receiving controllers of the first device selects at least one of the directional antenna sectors, responsive to the information received from the second device; and

wherein a selected one of the transmitting controllers is selectively coupled to a at least one of the directional antenna sectors of the first device in order to transmit at least one data packet via at least one of the directional antenna sectors as selected by the receiving controller of the first device.

9. The system as in Claim 8, wherein at least one of the first device and the second device is part of at least one of the following: a wireless access point, an 802.11 access point, an 802.11 wireless network adapter, an 802.15 access point, an 802.15 wireless network adapter, an 802.16 access point, an 802.16 wireless network adapter, a base station, a cellular phone base station, a 3G base station, a 4G base station, a 3G wireless device, a 4G wireless device, a mobile device, a laptop computer, a desktop computer, a personal digital assistant, a cellular phone, a 2.5G cellular phone, a 3G device, a 4G device, a 5G device, a multimedia device, an electronic book, and an access router.

10. The system as in Claim 8, wherein the first device is selectively coupled to at least one of the directional antenna sectors in at least one of: in a predefined order, in a random order, and in a circular order.

11. The system as in Claim 8, wherein the first device is selectively coupled to at least one of the directional antenna sectors responsive to the information received from the second device.

12. An antenna system for transmitting and receiving a plurality of data packets, the system comprising:

an antenna control unit;

a plurality of directional antenna sectors each associated with a respective region of space for transmitting and receiving electromagnetic signals;

at least one receiving controller;

wherein each said directional antenna sector is at least one of the following: a flat panel, a planar, a parabolic dish, a slotted, a micro-strip, omni and a Yagi;

wherein the antenna control unit selects the manner in which each of selected ones of said directional antenna sectors is coupled to the transmitted signal prior to transmitting of at least one data packet;

wherein, prior to receiving of at least one data packet the antenna control unit selects the manner in which each of said selected ones of said directional antenna sectors is coupled to the received signal ; and

wherein a selected one of the at least one said receiving controller measures electromagnetic characteristics of the received signal from the selected ones of the plurality of directional antenna sectors.

13. The system as in Claim 12,

wherein a selected one of the at least one said receiving controller receives the received signal from the selected ones of the directional antenna sectors; and

wherein the selected one of the at least one said receiving controller changes the selected ones of the directional antenna sectors in at least one of: a predefined manner, an arbitrary manner, a random manner, and a predefined manner. .

14. The system as in Claim 12, wherein each said directional antenna sector is coupled at most in one of the following manners: to transmit a transmitted signal, to receive a received signal, to an electric ground potential; and to a predefined electric potential.

15. The system as in Claim 12, further comprising:

at least one transmitting controller;

wherein a selected one of the at least one said transmitting controller is coupled to at least one selected one of the directional antenna sectors; and

wherein, prior to the transmission of at least one data packet, the selected one of the at least one said transmitting controller selects at least one of said selected ones of the directional antenna sectors responsive to the electromagnetic characteristics of the received signal.

16. The system as in Claim 12, wherein at least two of the plurality of directional antenna sectors are stackable.

17. The system as in Claim 12, wherein each of said directional antenna sectors is a flat panel antenna having a width and a length, and wherein the plurality of the directional antenna sectors are aligned according to orientation of the length.

18. The system as in Claim 12, wherein the plurality of directional antenna sectors are positioned as though mounted upon an outer surface of a cylindrically shaped object.

19. The system as in Claim 16, wherein each of said directional antenna sectors is a flat panel antenna with a width and length that defines a rectangle,

wherein each said rectangle is vertically stackable, and

wherein each said rectangle is oriented to face a selected predefined direction in space.

20. The system as in Claim 16, wherein each directional antenna sectors is a Yagi directional sector, and wherein of the vertically stacked Yagi directional antenna sectors radiates electromagnetic energy in a respective predefined direction in space.

21. An antenna apparatus comprising:

a self-contained antenna structure comprising:

a plurality of flat panel directional antennas, wherein each of said plurality of flat panel directional antennas is comprised of a plurality of patches arranged in a pattern;

a support structure for attaching the plurality of said flat panel directional antennas; and

an antenna control system, coupled to each of said plurality of said flat panel directional antennas, for selectively coupling and communicating data packets to at least one selected one of said plurality of flat panel directional

antennas in accordance with predefined criteria determined on a packet by packet basis.

22. The apparatus as in Claim 21, wherein the flat panel directional antennas provide for receiving electromagnetic signals; and

wherein the antenna control system is responsive to the electromagnetic signals to provide the predefined criteria.

23. The apparatus as in Claim 21,

wherein the predefined criteria is determined for a group of the packets; and

wherein the group of the packets is selected responsive to the predefined criteria.

24. The apparatus as in Claim 21, further comprising:

an external computing system; and

means for coupling the antenna control system to the external computing system, and

wherein the external computing system provides a source and a destination for the data packets.

25. The apparatus as in Claim 24, wherein the external computing system utilizes at least one of: a plurality of coax cables, a multi-lead coax cable, a parallel data connection, a serial data connection, a parallel data and control connection, parallel data, a timing and control connection, a PCMCIA (personal computer memory card international association) interface, a USB (universal serial bus), an IEEE 1394 (Fire-Wire), an infra red (IR) interface, a free space optical (laser), and a wireless interface.

26. The apparatus as in Claim 24, wherein the external computer system utilizes at least one of the following protocols: IEEE 802.11, IEEE 802.15, IEEE 802.16, CDMA 2000, WCDMA, UMTS, GPRS, 2.5G, 3G, 4G, 5G, and GSM.

27. The apparatus as in Claim 21, wherein the plurality of flat panel directional antennas are attached to one another at a defined angle.

28. The apparatus as in Claim 27, wherein the flat panel directional antennas are attached side-by-side.

29. The apparatus as in Claim 27, wherein the defined angle is within a range and is adjustable so as to maximize efficiency of the antenna apparatus.

30. The apparatus as in Claim 29, wherein at least two of the plurality of flat panel directional antennas are positioned in the same plane of orientation and operate simultaneously to provide for transmission and reception of the data packets.

31. The apparatus as in Claim 27, wherein the defined angle is a variable within a range and is adjustable so that the antenna apparatus folds to occupy less space.

32. The apparatus as in Claim 31, wherein the defined angle is within a range, the apparatus further comprising: means for changing the defined angles responsive to a control signal.

33. The apparatus as in Claim 21, wherein the flat panel directional antennas are attached in a fixed orientation to the support structure.

34. The apparatus as in Claim 21, wherein the flat panel directional antennas are attached in a re-orientatable manner to the support structure.

35. The apparatus as in Claim 21, further comprising an omni-directional antenna.

36. The apparatus as in Claim 21, wherein the flat panel directional antennas are arranged in a plurality of vertically stackable slices.

37. The system as in Claim 36, wherein the vertically stackable slices are positioned as though mounted upon an outer surface of a cylindrically shaped object.

38. A communications method, comprising:

transmitting and receiving a plurality of data packets to and from an antenna control unit;

transmitting and receiving electromagnetic signals to and from a plurality of directional antenna sectors each associated with a respective region of space, responsive to the transmitting and receiving from the antenna control unit;

providing for at least one receiving controller, responsive to the transmitting and receiving electromagnetic signals;

providing for at least one of the following: a flat panel, a planar, a parabolic dish, a slotted, a micro-strip, omni and a Yagi for each said directional antenna sector;

selecting, prior to transmitting of at least one data packet via the antenna control unit, the manner in which selected ones of said directional antenna sectors are coupled to the transmitted signal responsive to the transmitting and receiving electromagnetic signals;

selecting, prior to receiving of at least one data packet via the antenna control unit, the manner in which selected ones of said directional antenna sectors are coupled to the received signal responsive to the transmitting and receiving electromagnetic signals; and

measuring electromagnetic characteristics of the received signal from selected ones of the plurality of directional antenna sectors via said at least one said receiving controller.

39. The method as in Claim 38, further comprising:

receiving the received signal from selected ones of the directional antenna sectors via said at least one said receiving controller; and

changing the selected ones of the directional antenna sectors in at least one of: a predefined manner, an arbitrary manner, a random manner, a predefined manner via said one of the at least one said receiving controller.

40. The method as in Claim 38, further comprising:

coupling each said directional antenna sector in at most one of the following manners: to transmit a transmitted signal, to receive a received signal, to an electric ground potential; and to a predefined electric potential.

41. The method as in Claim 38, further comprising:

selecting at least one transmitting controller as a selected one responsive to the transmitting and receiving electromagnetic signals;

coupling the selected one of the at least one said transmitting controller to at least one selected one of the directional antenna sectors; and

selecting, prior to the transmission of at least one data packet via the selected one of the at least one said transmitting controller, at least one selected one of the directional antenna sectors responsive to the electromagnetic characteristics of the received signal.

42. The method as in Claim 38, further comprising:

stacking adjacent to each other at least two directional antenna sectors of the plurality of said directional antenna sectors.

43. The method as in Claim 38, further comprising:

providing for each of said directional antenna sectors a flat panel antenna having a width and a length; and

aligning the plurality of the directional antenna sectors according to orientation of the length.

44. The method as in Claim 39, further comprising:

positioning the plurality of said directional antenna sectors in positions as though mounted upon an outer surface of a cylindrically shaped object.

45. The method as in Claim 42, further comprising:

providing for each of said directional antenna sectors a flat panel antenna with a width and length that defines a rectangle; and

orienting each said rectangle for a plurality of said directional antenna sectors into a vertically stackable flat panel antennas oriented to face in a selected predefined direction in space.

46. The method as in Claim 42, further comprising:

providing a Yagi directional antenna sector for each of said directional antenna sectors; and

radiating electromagnetic energy in a respective predefined direction in space via the said Yagi directional antenna sector.

47. A method for constructing a self-contained antenna apparatus, the method comprising:

providing a plurality of flat panel directional antennas;

arranging a plurality of patches in a predefined pattern in each of said plurality of flat panel directional antennas;

attaching the plurality of said flat panel directional antennas via an antenna support structure;

coupling an antenna control system to each of the said plurality of said flat panel directional antennas;

providing predefined criteria for coupling communicating data packets via said antenna control system;

determining said predefined criteria on a packet by packet basis; and

selectively coupling communicating data packets to at least one selected one of said plurality of flat panel directional antennas, responsive to the determining of the predefined criteria.

48. The method as in Claim 47, further comprising:

providing for receiving electromagnetic signals via at least one the flat panel directional antennas; and

responding to the electromagnetic signals to provide the predefined criteria via the antenna control system.

49. The method as in Claim 47, further comprising:

determining the predefined criteria for a group of the communicating data packets; and

selecting the group of the communicating data packets, responsive to the predefined criteria.

50. The method as in Claim 47, further comprising:

an external computing system;

coupling the antenna control system to the external computing system; and

providing via the external computing system a source and a destination for the communicating data packets.

51. The method as in Claim 50, further comprising:

coupling the antenna control system to the external computing system via at least one of: a plurality of coax cables, a multi-lead coax cable, a parallel data connection, a serial data connection, a parallel data and control connection, parallel data, a timing and control connection, a PCMCIA (personal computer memory card international association) interface, a USB (universal serial bus), an IEEE 1394 (Fire-Wire), an infra red (IR) interface, a free space optical (laser) and a wireless interface.

52. The method as in Claim 50, further comprising:

utilizing at least one of the following protocols: IEEE 802.11, IEEE 802.15, IEEE 802.16, CDMA 2000, WCDMA, UMTS, GPRS, 2.5G, 3G, 4G, 5G, and GSM.

53. The method as in Claim 48, further comprising:

defining at least one angle for attaching the plurality of flat panel directional antennas to one another; and

attaching the plurality of flat panel directional antennas to one another via said at least one angle of defined angles.

54. The method as in Claim 53, further comprising:

attaching the flat panel directional antennas side-by-side.

55. The method as in Claim 53, further comprising:

providing an adjustable range for the one angle to permit for maximum efficiency of the self-contained antenna apparatus.

56. The method as in Claim 55, further comprising:

positioning at least two of the plurality of flat panel directional antennas in a same plane of orientation; and

operating said at least two of the plurality of flat panel directional antennas simultaneously to provide for transmission and reception of the communicating data packets.

57. The method as in Claim 53, further comprising:

providing an adjustable range for said one defined angle; and

varying said one angle within the adjustable range so that the self-contained antenna apparatus folds to occupy less space.

58. The method as in Claim 53, further comprising:

changing said one angle responsive to said at least one electromagnetic signal.

59. The method as in Claim 47, wherein the flat panel directional antennas are attached in a fixed orientation to the antenna support structure.

60. The method as in Claim 47, further comprising:

attaching the flat panel directional antennas in a re-orientatable manner to the antenna support structure.

61. The method as in Claim 47, further comprising:

providing an omni-directional antenna as at least one of said plurality of flat panel directional antennas.

62. The method as in Claim 47, further comprising:

stacking the flat panel directional antennas in a plurality of vertically stackable slices.

63. The method as in Claim 62, further comprising:

positioning the vertically stackable slices as though mounted upon an outer surface of a cylindrically shaped object.